ARCADIS

Workshop RIDM 11 july 2006 Rijkswaterstaat Den Haag

Infrastructuur | Milieu | Gebouwen

New Orleans: IHNC Flood gates Conceptual Study

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Contents

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- Flood control system in New Orleans
- The conceptual study
- The flood gates
- Results, alternatives and continuation
- discussion

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Introduction

- Conceptual study on two floodgates
- Time, data: Initial engineering evaluation, overview
- USA – Dutch project; transfer of Dutch technology
- ARCADIS (USA & Netherlands) & WL Delft Hydraulics
- US Army Corp of Engineers NO District
- Key elements in NO Hurricane Protection System
- Purpose: first line of defense, reduction of costs
- Type of gates, locations, construction, costs, other

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Flood control system in New Orleans

- HPS: Flood walls, levees, pump stations and…gates
- Closure of navigable canals during hurricanes and storms
- Innner Harbor Navigational Canal
  - IHNC Seabrook: already design (80’)
  - GIWW/MRGO: unknown
- SPH, 100 year protection level
- Prior to re-evaluating storm surge
- 350 M $ budget by congress for the two gates

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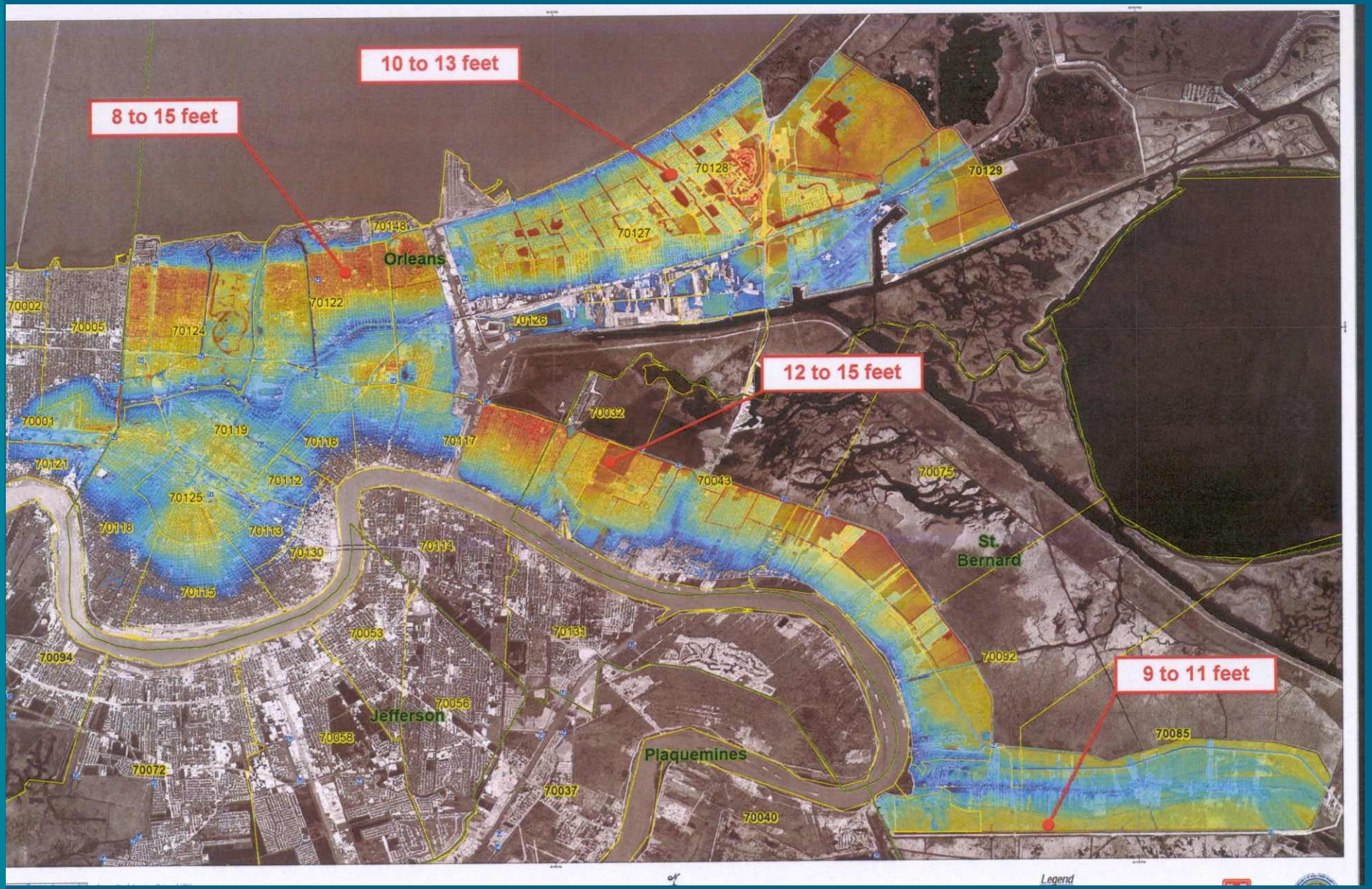
10 to 13 feet
8 to 15 feet
12 to 15 feet
9 to 11 feet
Orleans
Jefferson
Plaquemines
St. Bernard
70128
70129
70148
70127
70002
70005
70124
70122
70126
70001
70119
70116
70117
70032
70121
70112
70125
70043
70075
70118
70113
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70131
70094
70092
70056
70058
70085
70072
70037
70040
Legend

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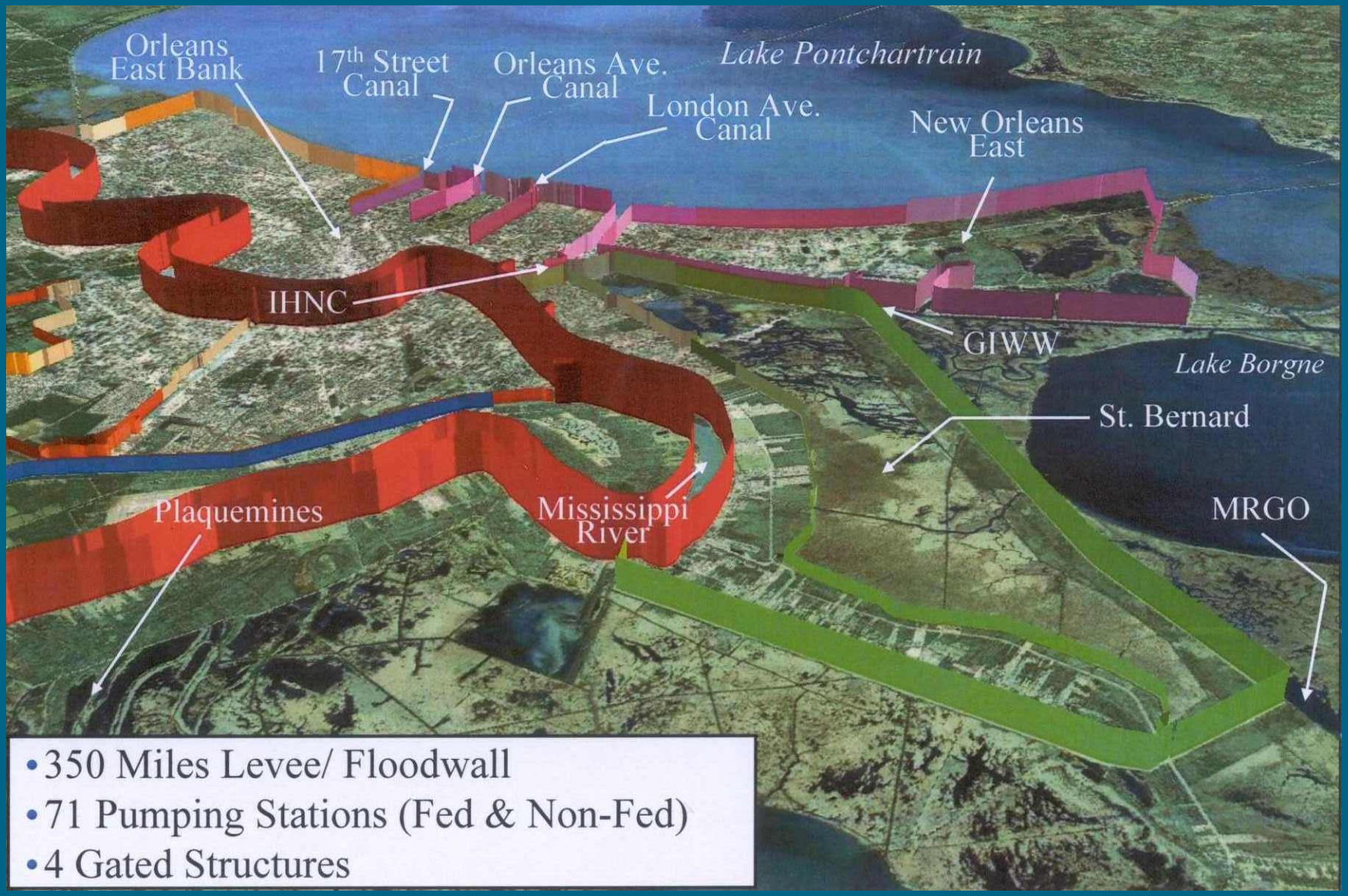
Orleans East Bank
17th Street Canal
Orleans Ave. Canal
London Ave. Canal
Lake Pontchartrain
New Orleans East
IHNC
GIWW
Lake Borgne
St. Bernard
Plaquemines
Mississippi River
MRGO
• 350 Miles Levee/ Floodwall
• 71 Pumping Stations (Fed & Non-Fed)
• 4 Gated Structures

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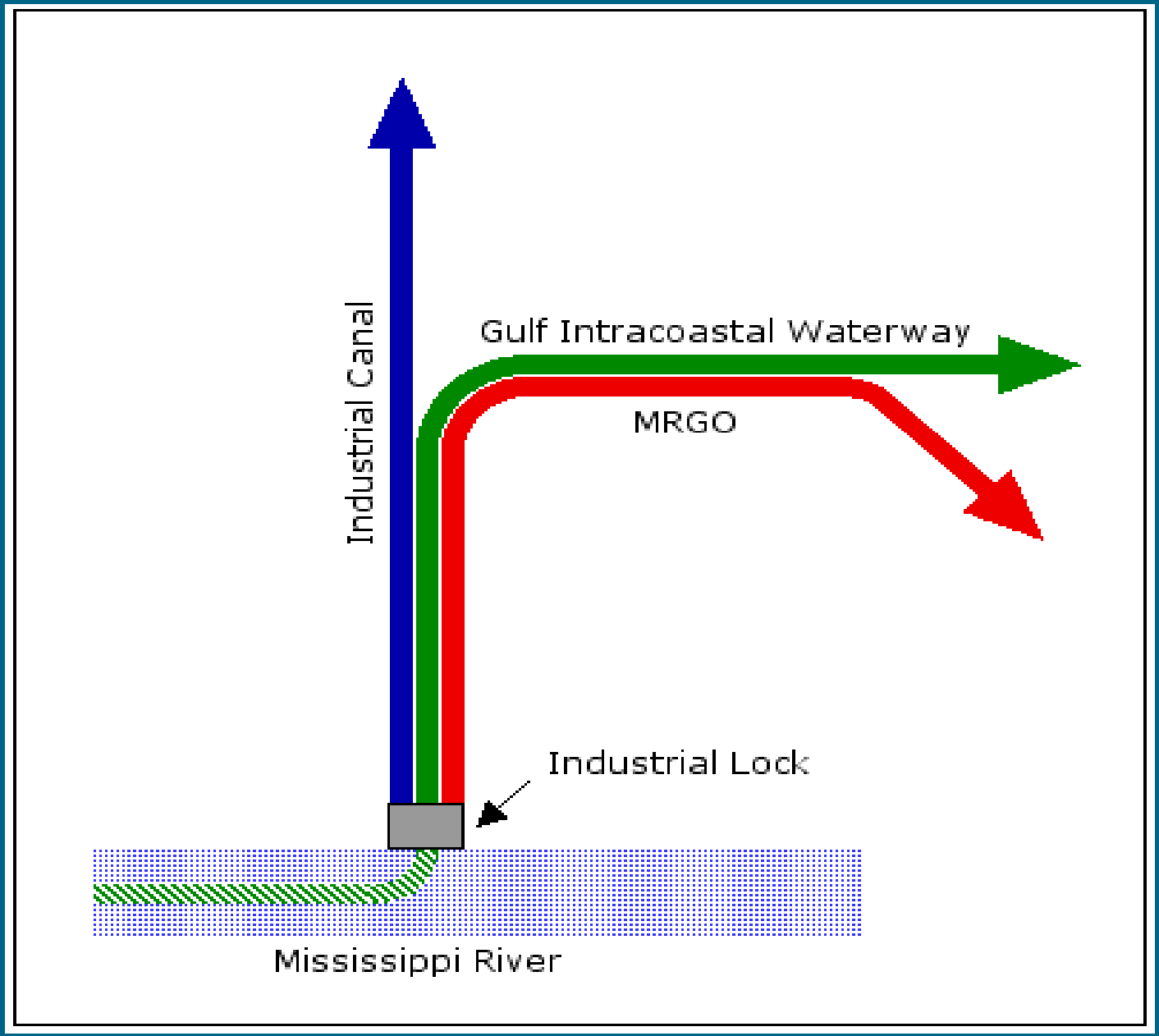
Industrial Canal
Gulf Intracoastal Waterway
MRGO
Industrial Lock
Mississippi River

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The conceptual study

- Overview of navigable gate types options, comparisons
- Proposed gate designs:
  - Gate selection
  - Site selection
  - Levees and floodwalls
  - Hydraulics
  - Geologics/geotechnical
  - structural
  - Mecanical and electrical
  - Navigation
  - Environmental salinity, sediment, wetlands, tidal, species

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The conceptual study - continuation

- Conceptual level cost estimates
- Moving forward to implementation

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The flood gates

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Venice: Giant platforms on hinges

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Holland: Eastern Scheldt barri

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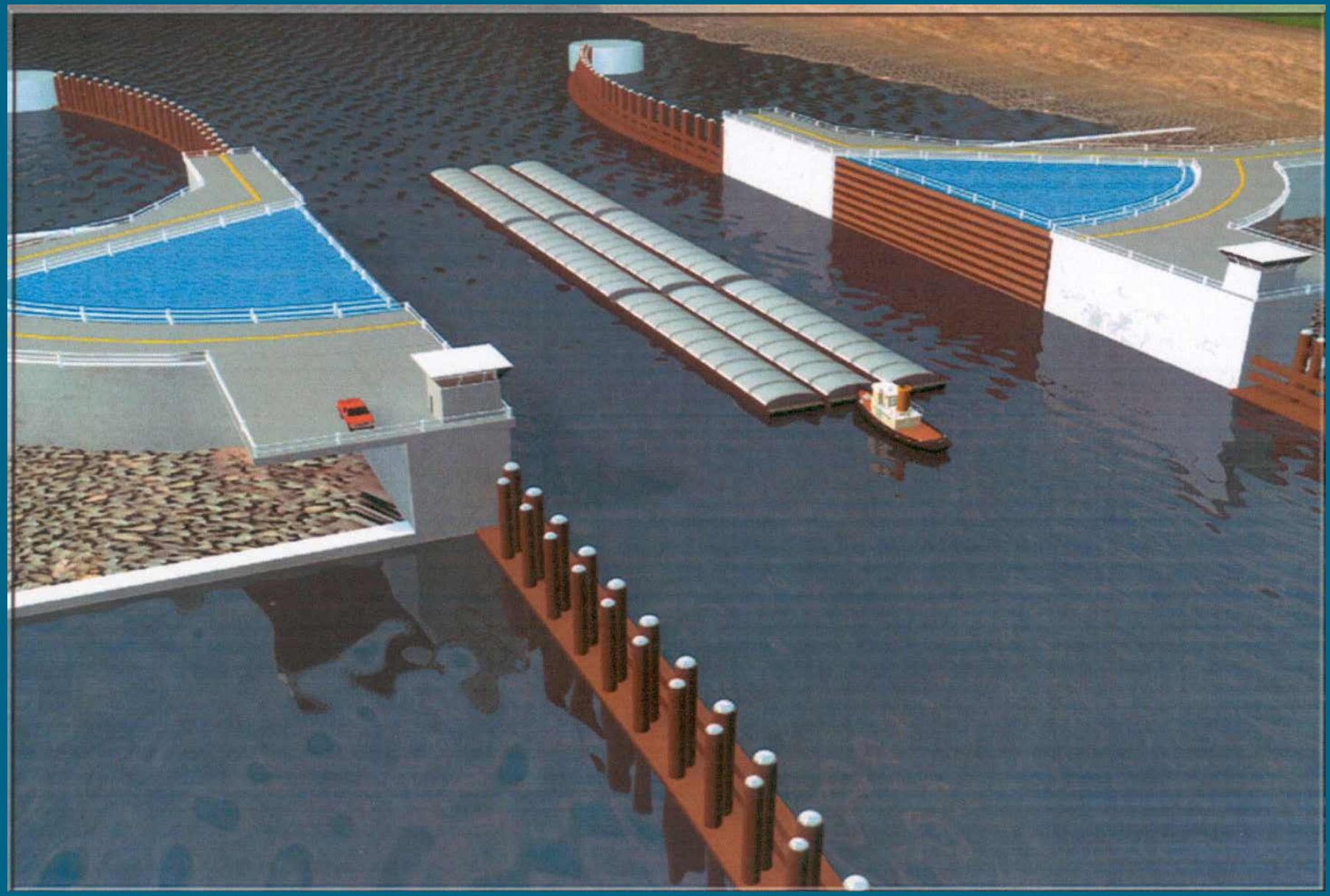

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Results

- GIWW/MRGO: 350 foot wide floating sector gate; estimated cost: gates, levees, facilities: 500 M $
- IHNC: 110 foot wide sector gate; estimated cost: gates, levees, facilities: 100 M $
- No impact to salinity
- No HTRW
- Mitigation required for wetlands
- Very soft foundations, overall subsidence

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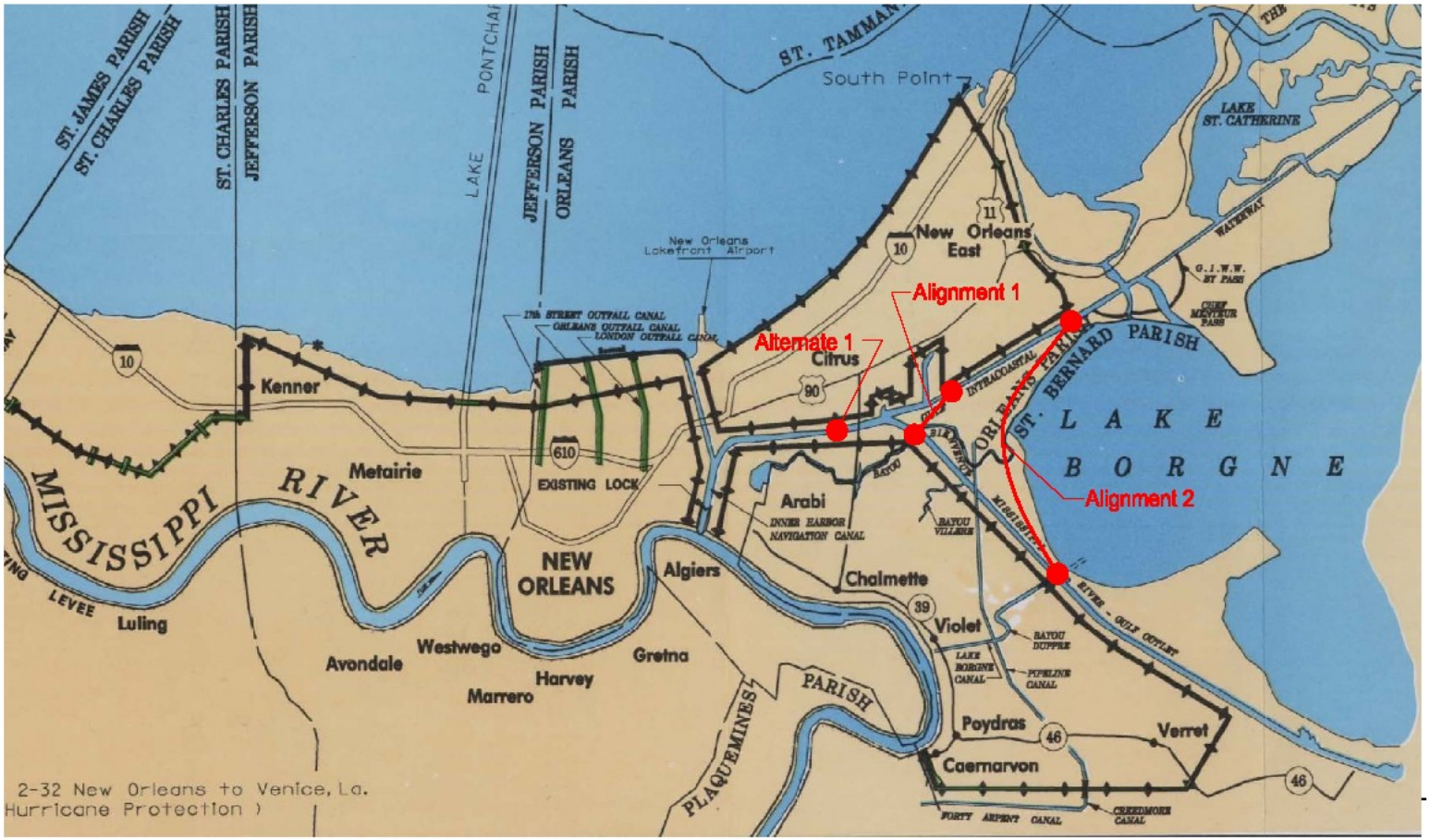
Alternatives and continuation



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Discussion: RIDM?

- Planning, time, constraints
- Integrated part of defense system
- Design storm
- INHC and GIWW gates: innovations or copies?
- Locations, alternatives
- Outer barrier: second line of defense GIWW
- Interim structures
- shipping

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